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■ **Contents:**

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A single record combines together all publication stages of the invention, from an unexamined publication to an examined document and to a granted patent.

- Coverage starting dates vary by country. 1920's and earlier for US, DE, FR, and GB publications. See the complete country coverage listing on page 2.

- English language abstracts are available for the following countries: US, PCT, EP, GB, FR, DE, CH, JP, CN. Other countries are added periodically from 2000.

- Patent Classifications include: EPO Classification (ECLA, Dutch and Berlin Classifications), International Patent Classification (IPC), and USPTO Classification.

- Search reports, patent and bibliographic cited references are available for US, EP, FR, GB and PCT publications.

- More than 10 million images

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Country Coverage

(year in parentheses indicates the year of earliest documents, column indicates comprehensive coverage date)

| Country	Country Code	Coverage from:	Country	Country Code	Coverage from:
Argentina	AR	1973	Latvia	LV	1994
ARIPO	AP	1984	Lithuania	LT	1994
Australia	AU	1966	Luxembourg (1946)	LU	1960
Austria	AT	1969	Malawi	MW	1973
Belgium (1926)	BE	1964	Malaysia	MY	1971
Bosnia and Herzegovina	BA	1998	Malta	MT	1968
Brazil	BR	1973	Mexico	MX	1981
Bulgaria	BG	1973	Moldova	MD	1994
Canada	CA	1973	Monaco	MC	1975
China	CN	1986	Mongolia	MN	1972
Croatia	HR	1994	Netherlands (1912)	NL	1964
Cuba	CU	1974	New Zealand	NZ	1979
Cyprus	CY	1975	Norway	NO	1968
Czech Republic	CZ	1993	OAPI	OA	1966
Czechoslovakia	CS	1973	Philippines	PH	1975
Denmark	DK	1968	Poland	PL	1973
Estonia	EE	1995	Portugal	PT	1976
Egypt	EG	1976	Romania	RO	1973
EPO citations to Publications	XP	1835	Russian Federation	RU	1972
Eurasian Patents	EA	1997	Singapore	SG	1983
European Patents	EP	1978	Slovakia	SK	1993
Finland	FI	1968	Slovenia	SI	1992
France (1902)	FR	1920	South Africa	ZA	1971
Germany (1877)	DE	1968	Soviet Union	SU	1972
Germany, Democratic Republic	DD	1973	Spain	ES	1968
Great Britain (1909)	GB	1963	Sweden	SE	1968
Greece	GR	1977	Switzerland (1920)	CH	1969
Hong Kong	HK	1976	Tajikistan	TJ	1998
Hungary	HU	1994	Taiwan	TW	2000
India	IN	1975	Trinidad & Tobago	TT	1994
Ireland	IE	1973	Turkey	TR	1973
Israel	IL	1968	United States (1920)	US	1968
Italy	IT	1973	Vietnam	VN	1984
Japan	JP	1973	WIPO (PCT) Applications	WO	1978
Kenya	KE	1975	Yugoslavia	YU	1973
Korea	KR	1978	Zambia	ZM	1968
			Zimbabwe	ZW	1980

Sample Record

Example 1. PLUSPAT [MMAX display format] – Family JP04362718

```
1/1 PLUSPAT - (C) QUESTEL-ORBIT- image
CPIM (C) Questel-Orbit
PN  - US5586334 A 19961217 [US5586334]
      CA2070955 A1 19921211 [CA2070955]
      CA2070955 C 19980915 [CA2070955]
      DE69227147 D1 19981105 [DE69227147]
      DE69227147 T2 19990218 [DE69227147]
      EP0518622 A1 19921216 [EP-518622]
      EP0518622 B1 19980930 [EP-518622]
      JP4362718 A 19921215 [JP04362718]
      JP7101376 B 19951101 [JP95101376]
      JP2068463 C 19960710 [JP2068463]
      KR9510829 B1 19950923 [KR9510829]
TI  - (A) Apparatus and method for suspending and resuming
      software on a computer
OTI - (A1) Dispositif et procédé à discontinuer et à reprise
      en marche du logiciel dans un ordinateur.
    - (A1) Anordnung und Verfahren zur zeitweiligen
      Einstellung und Wiederinbetriebnahme von Software in
      einem Rechner.
PA  - (A) MATSUSHITA ELECTRIC IND CO LTD  (JP)
IN  - (A) MIYAZAKI MASAYA  (JP); ENOKI NOBUYUKI  (JP); MORITA
      MITSUAKI  (JP)
AP  - 1991JP-0137486 19910610; 1992DE-6027147 19920609;
      1995US-0376097 19950120; 1992KR-0010031 19920610;
      1992CA-2070955 19920610; 1992EP-0305289 19920609
PR  - 1991JP-0137486 19910610; 1992US-0896131 19920609;
      1995US-0376097 19950120
IC  - (A) G06F-001/26
EC  - G06F-009/445B; G06F-011/14A8S
PCL - 713300000  714024000
DS  - (EP-518622)
      DE FR GB IT
CT  - (US5586334)
      US3959778; US4096560; US4458307; US4907150; US4994934;
      US5167024; US5218607; US5276890; US5339444; US5375230;
      US5392438; EP0230351; EP0365128; EP92007321; WO9207321
    - Toshiba T1600 Portable Personal Computer User's Manual,
      Sep. 1988.
      Elektor Electronics, vol. 9, No. 12, Dec. 1983,
      Canterbury, Great Britain, pp. 12.58-12.61, `NOVRAM:
      Data Storage without batteries`.
      Book Computer J-3100SS002 DynaBook/DynaBook Guide, Jun.
      22, 1990.
CT  - (EP-518622)
      Cited in the search report
    - EP365128(A)(Cat. X);EP230351(A)(Cat.
      X,D);WO9207321(A)(Cat. A,P);EP418448(A)(Cat. A)
    - ELEKTOR ELECTRONICS vol. 9, no. 12, December 1983,
      CANTERBURY, GB pages 1258 - 1261; ANON.: 'NOVRAM: data
      storage without batteries'(Cat. Y)
AB  - (US5586334)
      There is disclosed a control unit of a computer system
      comprising a volatile storing device for holding
      written data while the power is on, a non-volatile
      storing device for holding the written data even when
      the power is off, and a power-off preserving device for
      powering off after transferring the data held in the
      volatile storing device to the non-volatile storing
      device. The control unit of the computer system further
      comprising a power-on resuming device for returning the
      data held in the non-volatile storing device to the
      volatile storing device. {Display Abbreviated}
```

Example 2. Pluspat [STGS & IMG display format] - US patent (A document) - Filing Details

```
 1/1 PLUSPAT - (C) QUESTEL-ORBIT- image
PN  - US5946831 A 19990907 [US5946831]
STG - (A) United States patent
TI  - (A) Amphibious scraper
PA  - (A) WILCO MARSH BUGGIES & DRAGLINE  (US)
IN  - (A) WILSON SR JOHN M  (US); WILSON DEAN R  (US)
IC  - (A) E02F-003/64
AP  - US70854996  19960905  [1996US-0708549]
FD  - Rel. Prov. 60/018,761 19960531 [1996US-P018761]
PR  - US70854996  19960905  [1996US-0708549]
    - US1876196P  19960531  [1996US-P018761]
EC  - E02F-003/64
    - E02F-003/65
    - E02F-009/02D
    - E02F-009/02L
PCL - ORIGINAL (O) : 037412000; CROSS-REFERENCE (X) : 172799500
DT  - Basic
CT  - US2964861; US3110972; US3445946; US3776318; US3890010; US4248287;
      US4253512
    - Undated Document entitled "Wilco Marsh Buggies, Inc. Experts in
      De-Watering and Disposal Area Construction".
AB  - Apparatus and methods are described for modification of a scraper, or
      similar heavy equipment, for operation in wet or swampy areas
      including dredge disposal areas. A floatation tire assembly is
      described which is removably affixable to the scraper to give the
      scraper the amphibious capability to operate in the wet, swampy
      environment.
```
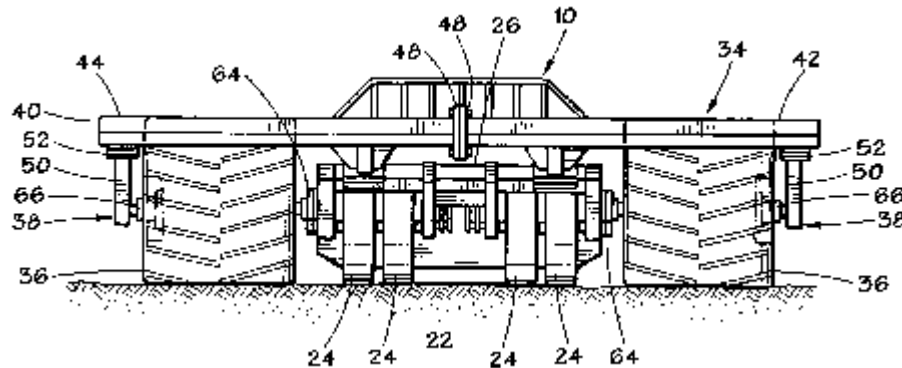
Example 3. Pluspat - [MABS Format] - Transliteration Free Assignee & Inventor Names

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1/1 PLUSPAT - (C) QUESTEL-ORBIT- image
CPIM (C) Questel-Orbit
 PN - EP0451049 A1 19911009 [EP-451049]
      EP0451049 B1 19981021 [EP-451049]
      AT172560 T 19981115 [ATE172560]
      DE69130373 D1 19981126 [DE69130373]
      DE69130373 T2 19990520 [DE69130373]
      FR2660458 A1 19911004 [FR2660458]
      FR2660458 B1 19920717 [FR2660458]
      JP4227573 A 19920817 [JP04227573]
 TI - (A1) Method and storage/retrieval system of chemical
      formulae in a database.
OTI - (A1) Proc,d, et systŠme de stockage et de recherche de
      formules chimiques dans une base de donn,es.
    - (A1) Verfahren und Speicher- und Abrufsystem von
      chemischen Formeln in einer Datenbank.
 PA - (A1) QUESTEL  (FR)
PA0 - QUESTEL SOCIETE ANONYME; 83-85, BLD VINCENT AURIOL
      75013 PARIS FRANCE
 IN - (A1) RENAUD DOMINIQUE  (FR); ROUSSEL JEAN-CLAUDE  (FR)
IN0 - (A) DOMINIQUE RENAUD; JEAN-CLAUDE ROUSSEL
 AP - 1991JP-0133818 19910329; 1991AT-0400897 19910402;
      1991DE-6030373 19910402; 1990FR-0004134 19900330;
      1991EP-0400897 19910402
 PR - 1990FR-0004134 19900330
 IC - (A1) G06F-015/40
 EC - G06F-017/30A2
 DS - (EP-451049)
      AT BE CH DE DK ES FR GB GR IT LI LU NL SE
 AB - (EP-451049)
      The invention relates to a method and a device for
      storage of and searching for Markush formulae (1) in a
      database. Each formula is stored in the form of
      connectivity tables in a base file (14) and comprises a
      reference number and a preselection number.
      For each base file (14) formula and for the formula
      sought (3), stored in a form identical to the file
      formulae, the list of all the nodes comprising two
      immediate neighbours is determined, and for each of the
      nodes of this list, all the fragments of formulae with
      two environments, stemming from this node, are
      calculated. For a first fragment of the Markush formula
      sought, there are then extracted from the file of
      fragments formed a first list of reference numbers of
      the possible formulae, then possibly a second list and
      so on until a list stemming from fragments of formula
      of optimised length is formed. Finally, the
      preselection numbers of the Markush formula sought are
      compared with the preselection numbers of the formulae
      from the list stemming from fragments in order to
      obtain a final list of candidates.
```

Example 4. Pluspat [STDR Format] - Index Terms – French Patent

```
 PN - FR2660458 A1 19911004 [FR2660458]
PN2 - FR2660458 B1 19920717 [FR2660458]
OTI - (A1) PROCEDE ET SYSTEME DE STOCKAGE ET DE RECHERCHE DE
      FORMULES CHIMIQUES DANS UNE BASE DE DONNEES.
 IT - DATA BASE; STORING; SEARCH; CHEMICAL FORMULA
 PA - (A1) QUESTEL  (FR)
PA2 - (B1) QUESTEL  (FR)
PA0 - QUESTEL SOCIETE ANONYME; 83-85, BLD VINCENT AURIOL
      75013 PARIS FRANCE
 IN - (A1) DOMINIQUE RENAUD; JEAN-CLAUDE ROUSSEL
 AP - FR9004134  19900330  [1990FR-0004134]
 PR - FR9004134  19900330  [1990FR-0004134]
 IC - (A1) G06F-015/40
 EC - G06F-017/30A2
```

Searching

Basic Index includes TI, OTI, AB and IT

Search by	Index	Search Hints	Examples
Terms from the Basic Index	/BI (default)	The Basic Index incorporates: Title (TI), Original Title (OTI), Abstract (AB) and Index Terms (IT) For Select French Patents Only All Basic Index terms may be searched without field qualifiers. For all these indexes, search by: - Single terms using Boolean or proximity operators; - Phrases using implied adjacency. Use truncation. Left-hand truncation is available.	SYNTHETIC AND AQUEOUS HYDROPHOB+ POLYMER? +SPHERE+
Title	/TI	Search English language title by: - Single terms using Boolean or proximity operators. - Phrases using implied adjacency. Use truncation. Left-hand truncation is available.	/TI OSTEOGENIC PROTEIN? /TI +LITOGRA+
Original Title	/OTI	Search non-English language title: - Single terms using Boolean or proximity operators. - Phrases using implied adjacency. Use truncation. Left-hand truncation is available.	/OTI OPTIQUE AND MULTIPLEXEUR /OTI FOTOINICIADORES FUNCIONALIZADOS
Abstract	/AB	Search terms in abstract for the following countries: US, PCT, EP, GB, FR, DE, CH, JP, CN* Search using: - Single terms using Boolean or proximity operators. - Phrases using implied adjacency. Use truncation. Left-hand truncation is available. *Additional Countries are added periodically from 2000.	/AB DNA AND VIRUS /AB "3D" DATA /AB PHENYL AND +VIRAL
Index Terms	/IT	English Language Index Terms for select French Patent Records. Search using: -Single terms using Boolean, proximity operators and/or truncation. -Phrases using implied adjacency and/or truncation. **Please note: Left hand truncation is not supported.	/IT DISTANCE /IT ROBOT+ /IT DISTANCE MEASUREMENT

Publication Data

Search by	Index	Search Hints	Examples
Publication number	/PN (/PC, /PUB, KD)	● Search all the patent publication stages using the patent/publication number in the format: 1) if patent authority uses a continuous series: CC-NNNNNN (if number is <7 digits, fill with a hyphen (-) after the country code) 2) if patent authority restarts number series each year: pre Y2K: CCYYNNNNN (if number is <5 digit, fill with 0 (zeros) after the series year CCYY) post Y2K: CCYYYYNNNNN CCYYYYNNNNNN • Search for all publications by ISO country code CC= ISO country code NNNNNNN= publication number • Search by publication country and kind code information: CCKK • Search by publication date: YYYYMMDD YYYYMM YYYY	/PN EP-982976 /PN EP--84665 /PN WO8909788 /PN WO9916958 /PN WO200016958 /PN JP2000077507 /PN US20010000001 /PN US /PN DE19743500 JPB2/PN EPA/PN EPB#/PN 19950625/PN 199506/PN 1995/PN
Publication date	PD	First original publication date. Search in the format: YYYY-MM-DD YYYY-MM YYYY Use numeric operators: =, <, >, <=, >=	PD=1985-10-19 PD=1997-04-01:1997-04-15 PD>=1997
Internal Publication Kind (Kind of Document)	/IKD	Searchable CCKK where CC is the country code and KK is the kind code. Use IKD with NBR, MEM, MEMS and GET.	/IKD JPB2 /IKD EPB#
Standardized Patent Number	/XPN	To facilitate searching across patent databases, Questel•Orbit has created a standardized patent number field. Use MEM /XPN to extract standardized patent numbers. Use *MEM /XPN to search the standardized patent numbers. To search as cited references.	 MEM /XPN *MEM /XPN *MEM /XCT

Application Data

Search by	Index	Search Hints	Examples
Application number	/AP	● Search application number using the number in the format: YYYYCC-NNNNNNN YYYY= 4-digit application year CC= ISO country code NNNNNNN= 7 digit application number (fill with 0 zero(s) if number contains less than 7 digits) ● Search by application date in the format: YYYYMMDD YYYYMM YYYY	/AP 1978EP-0100811 /AP 1989WO-US01505 /AP 1999US-0353402 19980615/AP 199806/AP 1998/AP
Application country	/APC (or /AP)	Search by ISO country code.	/APC WO /APC DE
Application date	/APD	Search in the format: YYYY-MM-DD YYYY-MM YYYY Use numeric operators: =, <, >, <=, >=.	APD=1999-03-09 APD=1999-01:1999-06 APD>=1996
Standardized Application Number	/XAP	To facilitate crossfile searching with other patent databases, Questel•Orbit has created a standardized application number field: YYYYCC-NNNNNNN. Use MEM /XAP to extract standardized application numbers. Use *MEM /XAP to search the standardized application numbers.	MEM /XAP *MEM /XAP

Priority Data

Search by	Index	Search Hints	Examples
Priority number	/PR	• Search the priority number using the number in the format: YYYYCC-NNNNNNN YYYY= 4-digit application year CC= ISO country code NNNNNNN= 7 digit application number (fill with leading 0 zero(s) if number contains less than 7 digits) • Search by priority date in the format: YYYYMMDD YYYYMM YYYY	/PR 1995DE-1020801 /PR 1998US-0179680 19970919/PR 199709/PR 1997/PR
Number of priorities	/NPR	Use numeric operators: =, <, >, <=, >=.	NPR=3 NPR>1
Priority country	/PRC (or /PR)	Search by ISO country code.	/PRC CA /PRC NL
Priority date	/PRD	Search in the format: YYYY-MM-DD YYYY-MM YYYY Use numeric operators: =, <, >, <=, >=.	PRD=1998-04-07 PRD=1999-01:1999-06 PRD>=1998
Standardized Priority Number	/XPR	To facilitate crossfile searching with other patent databases, Questel•Orbit has created a standardized priority number field: YYYYCC-NNNNNNN. Use MEM /XPR to extract standardized priority numbers. Use *MEM /XPR to search the extracted priority numbers.	 MEM /XPR *MEM /XPR

Classification Data

| EPO Classification (ECLA)

Note:
ECLA codes are revised monthly and retrospectively applied | /EC | Search the ECLA codes in the following formats:

SubClass: ANNA
Group: ANNA-NNN

SubGroup: ANNA-NNN/NN

Subdivision:

ANNA-NNN/NNN
ANNA-NNN/NNA
ANNA-NNN/NNAN
ANNA-NNN/NNANA
ANNA-NNN/NNANAN

The generic levels are separately searchable without truncation.

Use double quotes to search the complementary chemical codes that contain colon [:] separators.

Note: To search the range of ECLA codes, use colon [:] between the first and last item specified in the range of codes. *Auto posting of the subclasses may cause false hits, please use this feature with care*. | /EC A63F
/EC E21B-001
/EC E21B-00?
/EC E21B-003/02

/EC C21D-001/773
/EC C21D-006/00K
/EC B25G-001/06S1
/EC B25F-005/02B2B
/EC C12Q-001/68D2E1

/EC A63F
/EC E21B-001

/EC "C07C-025:08"
/EC "C07C-025:125"

/EC A63F-001/00:A63F-001/16 |
| EPO Classification ICO (In Computer Only) Classification

Note: Applied by the EPO examiners | /ICO | ICO classification is based on the ECLA classification system. The ICO codes are used in the following cases:
 - non-inventive aspects;
 - when one group takes precedence over another group;
 - for additional characteristics (if there is no specific group).

ICO symbols are derived from classification symbols, with a different 1st letter: instead of A,B,C,D,E,F,G,H the letters K,L,M,N,P,R,S,T are used. The ICO codes maybe either entirely or partially derived from the ECLA codes (there are also codes that are not derived from an existing code). | /ICO K61M
/ICO K61M-016
/ICO K61M-016/00M8

/ICO L65D-019/00Y4B1

/ICO L65G-812/02F4D2D4B |

Classification Data (cont'd)

International Patent Classification (IPC)	/IC (or /IPC)	IC field includes main, additional, original and secondary IPC codes. Search the IPC code(s) in formats: Class ANN# SubClass ANNA Group ANNA-NNN SubGroup ANNA-NNN/NN The generic levels are separately searchable without truncation. Note: To search the range of IPC codes, use colon [:] between the first and last item specified in the range of codes. *Auto posting of the subclasses may cause false hits, please use this feature with care.*	A63#/IC A63B/IC A63B-043/IC A63B-043/06/IC A42C/IC /IC A42C-00# /IC A42C-001:A42C-003 /IC A42C-001/00:A42C-001/08
	/ICM /ICA /ICS	ICM: Main IPC (from 1995 onwards) ICA: Additional IPC ICS: Secondary IPC	/ICM A63B-043 /ICA B25B-001 /ICS F01B
USPTO Classification (PCL) <u>Note:</u> US Classes are revised quarterly and retrospectively applied	/PCL	Search the Main (Primary) and Cross Reference (Secondary) classes simultaneously Search the original US classification with 9 or 12 characters in the format: MMMSSSDDDAAA. - MMM= three digit main class - SSS= three digit subclass or DIG for digest - DDD= three digits - AAA= 1-3 alpha characters To search the PCL by: - the class (3 characters), - the "digest" including the DIG notice, - the full code (ending with 3 digits (DDD) and 3 alphanumeric characters (AAA).	/PCL 714777000 /PCL 714 /PCL 714005
	/PCLO	Search the Main US Class	/PCLO 714
EPO Classification (Dutch)	/IDT	Search the old EPO Dutch classification	/IDT 124PA2F4B3B /IDT 42K18C
EPO Classification (Berlin)	/BC	Search the old EPO Berlin Classification	/BC F02C-007/264 /BC B41J-021/02

Applicant and Inventor Data

Search by	Index	Search Hints	Examples

Patent Assignee	/PA,	Search by:
		    - single terms using search operators and truncation
		    - full name using implied adjacency
			/PA MAX AND PLANCK

	/PA0	/PA0 searches additional Patent Assignee Information for US, JP, FR, **EP*** and **WO*** records. Terms in the /PA0 field will be retrieved by qualifying to the /PA field or by displaying and selecting from the /PAN index. ***EP data begins June 2002** ***WO data begins February 2003** *******Please Note***: Address information within the PA0 field **is not** searchable.	/PA MAX PLANCK /PA0 GENERAL ELECTRIC
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Patent Assignee -Country	/PAC	Search by patent assignee country using the two letter country code or country name. Note: not all the records include the PAC field.	/PAC JP /PAC JAPAN /PAC NL /PAC FR
Inventor	/IN	Search by: - Single terms or groups of words from the inventor name. - Full name using implied adjacency. Use the D proximity operator to combine the Family Name and First Name.	/IN THOMPSON DARWIN /IN OPPERMANN D H
	/IN0	**JP Records Only** IN0 searches additional Inventor information for JP records. The /IN0 field provides transliteration free data for Inventor names. Terms in the /IN0 field will be retrieved by qualifying to the /IN field or by displaying and selecting from the /INN index. *******Please Note***: Address information within the IN0 field **is not** searchable	/IN0 SMITH JOHN
	/INN, /INNA	/INN index searches the inventor's name only for the 1st publication stage. Use /INNA to search full Inventor Name in all publication stages as a bound phrase. With NBR, use /INNA index. Note: First names or may appear as initials only, so try both. Multiple initials may be separated by spaces, e.g. GUNTHER C J	/INN NAGANUMA KATSUYOSHI NBR /INNA GUNTHER C J
Inventor Country	/INC	Search by ISO country code or country name	/INC US /INC JAPAN

Other Indexes

Search by	Index	Search Hints	Examples
Cited References / Search Report (used by applicant and examiner)	/CT	Includes patent and bibliographic citations for US, EP, FR, GB, and PCT publications. Also includes cited references by applicant for FR publications. Format is the same as the PN field: CCNNNNNNN. Search patent citations using: - Standardized patent number - Two letter country code - Relevance category code Relevance Category codes, also known as relevance indicators, include: A – Technological background; D – Document cited in application; E – Earlier patent document; L – Document cited for other reasons; O - Non-written disclosure; P – Intermediate document; T – Theory or principle; X – Relevant if taken alone; Y – Relevant if combined with other documents; & - Member of same patent family. Search bibliographic citations using: - keywords - article XP reference number	/CT US4352588 /CT GB-222937 /CT JP /CT CAT A /CT CAT "D" /CT CAT E /CT CAT "L" /CT CAT O /CT CAT "P" /CT CAT X /CT IBM /CT XP 002058560
Standardized publication/patent numbers in the CT field	/XCT	To facilitate crossfile searching with other patent databases, Questel•Orbit has created a standardized citation number field: CCNNNNNNN. Use MEM /XCT to extract standardized citation numbers. Use *MEM /XCT to select the standardized citation numbers. Use *MEM /XPN to search the extracted citation numbers as the standardized patent/publication numbers.	MEM /XCT *MEM /XCT *MEM /XPN

Other Indexes (cont.)

Designated states for European Patents (EP) and PCT applications (WO)	/DS	Search by ISO country code using the two letter format CC. The EP designated states are from the last EP publication stage.	/DS AT /DS GB AND FR
Document Type	/DT	Search by the following EPO designated document types available: **(Not recommended for complete retrieval.)** - Basic - Corresponding Document - Intellectual Family - Old Publication	/DT BASIC /DT CORRESPONDING DOCUMENT /DT INTELLECTUAL FAMILY /DT OLD PUBLICATION
Filing Details	/FD	Available for US Records ONLY Provides information such as whether one patent is based upon another or is a division of another. Search using: Standardized Questel Orbit format: YYYYUS-NNNNNNN YYYY = Year US = Country code NNNNNNN = Filing Number Please Note: The USPTO Series Code is not used, infill with zeroes as necessary.) The exception is provisional applications beginning with series code 60. Replace 60 with P. Search by the US publication number using format USNNNNNNN Search by the presence of the field.	 /FD 2000US-0730246 /FD 2001US-**P**132684 /FD US5105599 FD=YES
Original language	/LA	Language is provided for EP and WO documents and in all other cases where the language is not the sole official language of the country. Search LA using the ISO three letter language code: CHI Chinese DAN Danish DUT Dutch ENG English FIN Finnish FRE French GER German ITA Italian JPN Japanese NAU Nauru NOR Norwegian RUS Russian SLO Slovak SPA Spanish SWE Swedish	/LA ENG ENGLISH/LA /LA GER OR FRE

Other Indexes (cont.)

Update codes	/QW	Search latest update for new publications	/QW 2000-08
	/UP	Search latest update for added documents. UP may contain older publications recently added to the EPO collection	/UP 2002-22
	/UE	Search publication stages update	/UE 2001-33
	/UAB	Searches update for addition of abstracts	
	/UCL	Searches update for the addition of EC and/or PCL classifications	/UCL 2002-36
	/UCT	Searches update for addition of citations/search report

Use the relevant update code in the following format:
YYYY-WW | /UCT 2002-35 |
| | /QM | Search monthly update for new documents.

Note: update periods are available starting August 2000 only, and Monthly periods from Feb. 2000 only. | /UP4 2001-03 |

Statistical Analysis

The following patent information in the PLUSPAT database can be statistically analyzed:

Publication Info		Application / Priority Info		Classifications	
Patent Assignee	GET PA	Priority Country	GET PRC	IPC Intl .Patent Classif.	GET IPC
	GET PAN	Priority Date (year)	GET PR	Main IPC	GET MIPC
Inventor	GET IN		GET PRD		
	GET INN			ECLA	
		Application Country	GET APC	(European Classification)	GET EC
Publication Country	GET PC	Application Date (year)	GET AP		
Publication Date (year)	GET PD		GET APD	US Classes	GET PCL
Publication Year	GET PY			US Main Class	GET PCLO

Note: GET PA (GET PAN), GET IN (GET INN) are analyzing the first stage publication information only.

General Syntax: GET <field>
Options:
EMAIL   GET <field> EMAIL   to receive statistical analysis results via email
TOP n   GET <field> TOP N EMAIL   to specify TOP N entries in the analyzed listing
TOSEL <listname>   GET <field> TOSEL <listname> TOP N
STORE   GET <field> TOSEL <listname> STORE

Syntax: GET ss N <field> TOSEL <listname> SAVE/STORE [TOP N, GT M]
Example: GET PA TOP 20 EMAIL

Current Awareness – SDI Profiles

It is possible to setup SDI (Current Awareness) profiles in the PLUSPAT database by using the SDI command after the search strategy has been created in the database. The created SDI profiles will be automatically run against each new update to the database or you may choose to receive the results on a monthly basis and the results will be sent either via postal mail or email (if specified).

General Syntax: SDI <SDIname>
                                    SDI <SDIname> <EMAIL>;SURV <update code>;PR <format>;<options>

Specific Update Syntax: SDI <SDIname>;SURV <update code field>

SURV QW   SDI <SDIname>;SURV QW   survey only new documents
SURV UP   SDI <SDIname>;SURV UP   survey all documents in latest update
                                                                                (may contain older publications recently added
                                                                                to the EPO collection)
SURV UE   SDI <SDIname>;SURV UE   survey equivalent documents
SURV UAB   SDI <SDIname>;SURV UAB   survey documents amended with abstracts
SURV UCL   SDI <SDIname>;SURV UCL   survey documents amended with ECs & PCLs
SURV UCT   SDI <SDIname>;SURV UCT   survey documents amended with citations
SURV QM   SDI <SDIname>;SURV UP4   survey documents monthly

Note: to survey both new and equivalent document updates: SDI <SDIname>; SURV UP UE
Parameters:
EMAIL   SDI <SDIname> EMAIL   to receive SDI results via email
RTF   SDI <SDIname> EMAIL RTF   to include special characters, accents etc.
XML
PDF
PR <format>   SDI <SDIname> EMAIL RTF;PR ABST to specify record display format

Family Searching

1. Family search based on the patent

To create a patent family for a particular invention, use the **FAM** command with the known patent number. *Note:* the XPN, XAP, and XPR fields may also be used for family searching as long as the Questel•Orbit standardized format is used.

Command Syntax: **FAM CCNNNNNNN/PN**   using patent/publication number
                                FAM YYYYCC-NNNNNNN/AP   using application number
                                FAM YYYYCC-NNNNNNN/PR   using priority number

Examples:

-   Publication number: FAM EP---1234/PN   Standardized Format
-   Application number: FAM 1978EP-0100811/AP   Standardized Format
-   Priority number: FAM 1997DE-1020719/PR   Standardized Format

Family search results display options:

FAMCITE	Citation Results, forward and backward, by Family, for EP, FR, GB, PCT & US citations
FAMSTAT	Results of the patent family search from PLUSPAT file and the corresponding records from the LGST (Legal Status) database integrated into the display
FAMSTATE	Family search results with integrated Legal Status (English language action descriptions only), also FAMSTAT MAXE
FAMLIST	Family search results from PLUSPAT file and all the corresponding records from the Legal Status database attached after the PLUSPAT records
FAMLISTE	Same display as FAMLIST (English language action descriptions only)
FAMINPD	Family search results from PLUSPAT file only (Legal Status records are not included)
MFAMSTAT	Same display as FAMSTAT integrated into one family record
MFAMSTATE	Same display as FAMSTATE integrated into one family record

FAM SS (Search Set)

2. Family search based on the set of documents

To create a patent family on a set of documents, use the **FAM** command followed by the search set number (SS N, where N is the number of the search set). Use HIS command to determine the search set number.

Command Syntax: **FAM SS N**   (where N is a search set number in a strategy)

Note: family search based on the SS number is limited to **1000** documents in the search set.

Example: FAM SS 1   (perform family search based on the results of search set number 1)

```
    java

     ** SS 1: Results 471

     Search statement   2

    fam ss 1

    377 Patent Groups
    ** SS 2: Results 946
```

Family Feature Displays

The **FAM** search feature and the **MFAM** display feature provide for the display of merged family records.

- FAM feature automatically retrieves all family member records for a set of results*
- MFAM feature integrates individual family member records into one merged family record**

After performing a family search, by using a number or a search statement, Questel-Orbit will respond by showing the total number of PlusPat records and the number of family records in the search statement.

Search statement 1

java

** SS 1: Results 471

Search statement   2

fam ss 1

377 Patent Groups
** SS 2: Results 946

prt mtst   (see MFAM display formats page 19)

Building MFAM record:
- **Patent number** data is taken from all family member records.
- **Title, Assignee, and Inventor** data elements are selected from a specific patent country / authority (see default order below)
- **Abstract** data may be provided from one preferred patent country /authority *or from **all** family member records with abstracts.*
- **Cited references** will be displayed for all EP, WO, FR and US family members, where available
- **Designated States** will appear for every EP and PCT publication. The EP designated states are from the last EP publication stage.
- **Classification Codes**: ECLA, US PCL, IPC, and ICO
  All the classification codes will be displayed for all members of the family.

Basis for Selecting Title, Assignee, Inventor and (first-listed) Abstract data:
The Patent authority default is set as the PCT minimum documentation collection with the order as follows:

  EP, US, WO, GB, FR, DE, CH, BE, JP, SU/RU

This means that title, Assignee, Inventor, and Abstract data will be selected from the EP record as a basis for building the record. If there is no EP record in the family, title, assignee, inventor and abstract data will be selected from the US record. If there is no US record in the family, data from the WO record will be used.

* fam ss is limited to results sets with 1000 records or less
** records may also be displayed with regular formats , i.e. one record per patent country /authority

---

Selecting MFAM Patent Country /Authority Preference

A specific Patent Country or Authority may be selected as the basis for the building the merged record.

This is controlled by the POP or OP options.

> Example: POP MFAM US

In this example, the Title, Assignee, Inventor, and Abstract for the US member will be used for creating the records and the US numbers will appear first in the merged record. If there is not a US family member, then the default display will be used.

- To set POP/OP to the default, use POP MFAM EP

Order for Patent Country / Authority Publication Numbers in a merged record:

POP/OP MFAM preference then Publication stages in alpha order, e.g.: AT , AU - ZW

Displaying Family Records

Family display formats are used with regular display syntax:

PRT <SS N> <format> <set, m-n>

Examples:

PRT SS 3 MTST SET

PRT MABS 1-5

PRT MMAX PSET 3

Formats

Format	Fields
MTST	TI OTI IC EC ICO PCL
MSC	TI OTI IC EC ICO PCL
MABS	PN TI OTI PA PA0 IN IN0 AP PR IC EC ICO PCL DS AB
MSTD	PN TI OTI PA PA0 IN IN0 AP PR IC EC ICO PCL DS
MALL	PN TI OTI PA PA0 IN IN0 AP PR IC EC ICO PCL DS CT AB
MMAX	PN TI OTI PA PA0 IN IN0 AP PR IC EC ICO PCL DS CT AB
MMSS	PN TI OTI PA PA0 IN IN0 AP PR DS
MSTA	PN TI OTI PA PA0 IN IN0 AP PR IC EC ICO PCL DS AB
MINI	PN TI PA PA0 IN IN0 AP PR
MASE	PN TI PA PA0 IN IN0 AP PR AB
BIBP	PN STG PN2 STG2 PN3 STG3 PN4 STG4 PN5 STG5 PN6 STG6 PN7 STG7 PN8 STG8 PN9 STG9 TI PA PA0 IN IN0 AP FD PR CT
MSTE	PN TI PA PA0 IN IN0 AP PR IC EC ICO PCL DS AB
MSTG	PN STG TI OTI PA PA0 IN IN0 IC AP PR EC ICO IDT PCL BC IT DS
MCIT	PN TI OTI PA PA0 IN IN0 AP PR CT AB

- Records may also be displayed with regular formats , i.e. one record per patent country/authority
- User defined display formats are not available for Merged Record Display

---

Family Display Options

1) **Legal Feature:** Display including corresponding Legal Status record(s):

   <FORMAT> LEGAL

   PRT MMAX LEGAL

2) **Fulltext / Clms Feature:** Display including corresponding Full-text or Claims record(s):

   PRT <FORMAT> FULLEPO CLM

   PRT MASE FULLEPO CLM

3) **Cited Feature:** Display including corresponding Cited record(s):

   <FORMAT> CITALL

   PRT MSTE CITALL

4) **Images Feature:**

   PRT IMG <N-N> <FORMAT> *Please note: IMG must directly follow PRT statement*

   PRT IMG 1-10 MSTA

5) **Plus Feature:**

   PRT <FORMAT> PLUS <FIELD OR FORMAT> (FILE)

   PRT MINI PLUS TI (DWPI)

MSC / MTST

```
1/1 PLUSPAT - (C) QUESTEL-ORBIT
  Title of the Invention:
     - (A) Control apparatus for controlling data read
        accesses to memory and subsequent address generation
       scheme based on data/memory width determination and
       address validation
  Other Title:
     - (A1) Dispositif et proc'ed'e d'acc'es rapide de lecture `a
       m'emoire.
     - (A1) Vorrichtung und Verfahren zum Speicherleszugriff
       mit hoher Geschwindigkeit.
  IPC (issuing Office):
     - (A) G06F-012/02
  EPO Classification(ECLA):
     - G06F-012/02C
  US Class Code:
     - ORIGINAL (O) : 711220000;  CROSS-REFERENCE (X) :
        711003000
```

MSTD

```
  1/1 PLUSPAT - (C) QUESTEL-ORBIT- image
  PN  - US5579500 A 19961126 [US5579500]
        CA2116314 A1 19940825 [CA2116314]
        DE69431737 D1 20030102 [DE69431737]
        EP0613087 A1 19940831 [EP-613087]
        EP0613087 B1 20021120 [EP-613087]
        JP6309222 A 19941104 [JP06309222]
        TW389863 B 20000511 [TW-389863]
  TI  - (A) Control apparatus for controlling data read accesses to memory and
        subsequent address generation scheme based on data/memory width
        determination and address validation
  OTI - (A1) Vorrichtung und Verfahren zum Speicherleszugriff mit hoher
        Geschwindigkeit.
      - (A1) Dispositif et procédé d'accés rapide de lecture à mémoire.
  PA  - (A) MATSUSHITA ELECTRIC IND CO LTD  (JP)
  PA0 - Matsushita Electric Industrial Company, Ltd., Osaka [JP]
  IN  - (A) SEKIBE TSUTOMU  (JP); KITAMURA TOMOHIKO  (JP); OCHIAI TOSHIYUKI
        (JP)
  AP  - 1994US-0200217 19940223; 1994DE-6031737 19940222; 1994TW-0101564
        19940223; 1994CA-2116314 19940223; 1994EP-0301250 19940222;
        1993JP-0353164 19931228
  PR  - 1993JP-0035092 19930224; 1993JP-0353164 19931228
  IC  - (A) G06F-012/02
  EC  - G06F-012/02C
  PCL - 711003000  711220000
  DS  - (EP-613087)
        DE FR GB
```

MMAX

```
1/1 PLUSPAT - (C) QUESTEL-ORBIT- image
  PN  - US5579500 A 19961126 [US5579500]
        CA2116314 A1 19940825 [CA2116314]
        DE69431737 D1 20030102 [DE69431737]
        EP0613087 A1 19940831 [EP-613087]
        EP0613087 B1 20021120 [EP-613087]
        JP6309222 A 19941104 [JP06309222]
        TW389863 B 20000511 [TW-389863]
  TI  - (A) Control apparatus for controlling data read accesses to memory and
        subsequent address generation scheme based on data/memory width
        determination and address validation
  OTI - (A1) Vorrichtung und Verfahren zum Speicherleszugriff mit hoher
        Geschwindigkeit.
      - (A1) Dispositif et procédé d'accés rapide de lecture à mémoire.
  PA  - (A) MATSUSHITA ELECTRIC IND CO LTD  (JP)
  PA0 - Matsushita Electric Industrial Company, Ltd., Osaka [JP]
  IN  - (A) SEKIBE TSUTOMU  (JP); KITAMURA TOMOHIKO  (JP); OCHIAI TOSHIYUKI
        (JP)
  AP  - 1994US-0200217 19940223; 1994DE-6031737 19940222; 1994TW-0101564
        19940223; 1994CA-2116314 19940223; 1994EP-0301250 19940222;
        1993JP-0353164 19931228
  PR  - 1993JP-0035092 19930224; 1993JP-0353164 19931228
  IC  - (A) G06F-012/02
  EC  - G06F-012/02C
  PCL - 711003000  711220000
  DS  - (EP-613087)
        DE FR GB
  CT  - (US5579500)
        US4691277; US4872138; US4914575; US5157776; EP0293720; EP0505157;
        JP60-24663; JP60-221857; JP63-89954; JP63-271647
      - IBM Technical Disclosure Bulleting, vol. 31, No. 3, Aug. 1988, New
        York, pp. 303-306, `High performance microprocessor memory system`.
  CT  - (EP-613087)
        Cited in the search report
```

```
       - EP293720(A)(Cat. X);EP505157(A)(Cat. A)
       - IBM TECHNICAL DISCLOSURE BULLETIN vol. 31, no. 3 , August 1988 , NEW
         YORK US pages 303 - 306 'High performance microprocessor memory
         system'(Cat. X)
       - Revealed during examination
       - EP604139(A)
  AB  - (US5579500)
       An apparatus and method for controlling data read access to memory, in
       response to an access request sent through a system bus. The apparatus
       includes an data storage device for preserving data corresponding to a
       predetermined address; a judging device for judging whether an access
       address indicated by the access request matches the predetermined
       address; and a control device for making the data storage device
       output data preserved therein to the system bus when the access
       address has been judged to match the predetermined address, and for
       making the data storage device hold data corresponding to a next
       address subsequent to the access address when the access address has
       been judged not to match the predetermined address.
```

Citation Searching

The CITF and CITB commands will find more patent results that are relevant to your search by using the citations that are included on patent publications.

The **CITF** command retrieves subsequent patents that are citing the patents in your initial set. The new result set contains both the original patents and the citing patents.

The **CITB** command retrieves the previously published patents cited by the patents in your initial set. The new set contains both the original patents and the cited patents.

The correct search syntax is to enter the command followed by your search set number, e.g., **CITF SS 1.** The maximum initial set size for both commands is 1,000 records.

```
  Selected file: PLUSPAT
  PLUSPAT - (c) Questel-Orbit, All Rights Reserved.
  Comprehensive Worldwide Patents database
  New Patent Citation Commands & FAM Citation Report - see INFO PATCITE
  Last update of file: 2003/02/06 (YYYY/MM/DD) 2003-05/UP (basic update)

Search statement    1
MCGREW/IN AND WRIGLEY/PA
  Frequency   Term
       491  MCGREW/IN
      2108  WRIGLEY/PA
  ** SS 1: Results 143
  Search statement   2

citf ss 1
  ** SS 2: Results 309
  Search statement   3

prt
  1/309 PLUSPAT - (C) QUESTEL-ORBIT
  PN  - US6508955 B1 20030121 [US6508955]
  STG - (B1) U.S. Patent (no pre-grant pub.) after Jan. 2, 2001
  TI  - (B1) Oxygen scavenger accelerator
  PA  - (B1) PACTIV CORP  (US)
  PA0 - Pactiv Corporation, Lake Forest IL [US]
  IN  - (B1) DEYO ALAN E  (US); DELDUCA GARY R  (US); LUTHRA VINOD K  (US); WU
        WEN P  (US)
  IC  - (B1) A21D-010/02 B65D-081/26 C01B-003/00 C09K-015/32
  AP  - US43961599  19991112  [1999US-0439615]
  PR  - US43961599  19991112  [1999US-0439615]
      - US85644897  19970514  [1997US-0856448]
      - US70064496  19960808  [1996US-0700644]
      - US10831598P  19981113  [1998US-P108315]
  EC  - A23B-004/16
      - A23L-003/3436
      - B01J-020/02
      - B01J-020/28
      - B65D-081/26F2
      - C09K-015/02
  PCL - ORIGINAL (O) : 252188280; CROSS-REFERENCE (X) : 252400100 426126000
        206204000
  DT  - Corresponding document
  UP  - 2003-05
```

Citation Searching (cont.)

```
   Search statement   3

citb ss 1
   ** SS 3: Results 582
   Search statement   4

prt

   1/582 PLUSPAT - (C) QUESTEL-ORBIT
   PN  - US6455080 B1 20020924 [US6455080]
   STG - (B1) U.S. Patent (no pre-grant pub.) after Jan. 2, 2001
   TI  - (B1) Chewing gum containing controlled release acyclic carboxamide and
         method of making
   PA  - (B1) WRIGLEY W M JUN CO  (US)
   PA0 - WM. Wrigley Jr., Company, Chicago IL [US]
   IN  - (B1) WOLF FRED R  (US); MCGREW GORDON N  (US); TYRPIN HENRY T  (US)
   IC  - (B1) A23G-003/30 A61K-009/68
   AP  - US52716900  20000316  [2000US-0527169]
   PR  - US52716900  20000316  [2000US-0527169]
       - WOUS9724166  19971229  [1997WO-US24166]
   EC  - A23G-003/30 &D
       - A23G-003/30 &H6
   PCL - ORIGINAL (O) : 426003000; CROSS-REFERENCE (X) : 424048000  424440000
   DT  - Basic
   UP  - 2002-40
```

The FAMCITE command is available in the PlusPat database, which has citations for EP, FR, GB, PCT and US patents.   After conducting a family search for a single patent family, you can display a complete citation report with the FAMCITE command. The report display in three parts :
- The original source family
- The citing patent families (families with a patent citing a member of the source family)
- The cited patent families (families with a patent cited by a member of the source family)

The results in all three sections show complete families. These fields are included for each family in the citiation report :
- PN   Number and date of publication of all members
- TI   English title of the first member
- OTI   Non-English title of the first member
- PA   Applicant of the first member
- IN   Inventor of the first member
- AP   Application numbers and dates of all members
- PR   Priority numbers and dates of all members
- CT   Citations of members EP, FR, GB, PCT, & US
- AB   Summary of first member

You can also display clipped images by adding the parameter IMG. The complete command syntax is **FAMCITE IMG**.

The maximum initial set size for both commands is 1,000 records.
The FAMCITE command can not be used with the LEGAL or FULLTEXT display options.

```
  PLUSPAT - (c) Questel-Orbit, All Rights Reserved.
  Comprehensive Worldwide Patents database
  New Patent Citation Commands & FAM Citation Report - see INFO PATCITE
  Last update of file: 2003/02/06 (YYYY/MM/DD) 2003-05/UP (basic update)

fam US5898235/PN
  1 Patent Groups
  ** SS 1: Results 2

famcite

  << Citation Report >>

  << Source Patent Family >>

  1/1 PLUSPAT - (C) QUESTEL-ORBIT- image
  PN  - US5898235 A 19990427 [US5898235]
        JP10214487 A 19980811 [JP10214487]
  TI  - (A) Integrated circuit with power dissipation control
  PA  - (A) ST MICROELECTRONICS INC  (US)
  PA0 - STMicroelectronics, Inc., Carrollton TX [US]
  IN  - (A) MCCLURE DAVID C  (US)
  AP  - 1996US-0775611 19961231; 1997JP-0354340 19971224
  PR  - 1996US-0775611 19961231
  CT  - (US5898235)
        US4683382; US5167024; US5483464; US5513361
  AB  - (US5898235)
        An integrated circuit device such as an SRAM operating in a battery
        backup mode, or operating in a quiescent mode when deselected in the
        operation of a portable electronic device, includes a power
        dissipation control circuit that reduces the voltage on an internal
        power supply node so that the memory array is powered at a minimum
        level sufficient to retain the data stored therein intact.

  << Citing Patents: Subsequent Patents Citing Source Family >>

  1/3 PLUSPAT - (C) QUESTEL-ORBIT
  PN  - US6377681 B1 20020423 [US6377681]
  TI  - (B1) Signal line driving circuit with self-controlled power dissipation
  PA  - (B1) NAT SEMICONDUCTOR CORP  (US)
  PA0 - National Semiconductor Corporation, Santa Clara CA [US]
  IN  - (B1) BREMNER DUNCAN JAMES  (GB)
  AP  - 1998US-0053110 19980401
  PR  - 1998US-0053110 19980401
  CT  - (US6377681)
        US5138658; US5323461; US5428682; US5881129; US5898235; US5912513;
        US6005934
  AB  - (US6377681)
        A signal line driving circuit with power control for selectively
        reducing internal power dissipation when driving an external load.
        While driving the external load with a constant current the output
        voltage generated across such load is monitored. If the load impedance
        decreases sufficiently to cause the output voltage to fall below a
        predetermined threshold value and, therefore, cause the voltage across
        the signal line driving circuit to increase, the magnitude of the
        power supply voltage is automatically reduced, thereby reducing the
        voltage across the signal line driving circuit. Such a signal line
        driving circuit is particularly advantageous as a subscriber line
```

interface circuit (SLIC). As the subscriber goes from an on-hook
condition to an off-hook condition and if the subscriber loop is
sufficiently short (or low in impedance), a lower power supply voltage
is used to minimize the power dissipation of the SLIC while still
maintaining the required subscriber loop current.

2/3 PLUSPAT - (C) QUESTEL-ORBIT
PN - US2001028270 A1 20011011 [US20010028270]
      US6396336 B2 20020528 [US6396336]
      US6333671 B1 20011225 [US6333671]
TI - (B1) Sleep mode VDD detune for power reduction
PA - (B1) IBM (US)
PA0 - International Business Machines Corporation, Armonk NY [US]
IN - (B1) ROBERTS ALAN L (US); WISTORT REID A (US)
AP - 1999US-0433279 19991103; 2001US-0883048 20010615
PR - 1999US-0433279 19991103; 2001US-0883048 20010615
CT - (US6333671)
      US4130899; US4683382; US4691123; US4716463; US5077518; US5477279;
      US5511026; US5530398; US5663919; US5747977; US5773966; US5898235;
      US6049245; US6118267; JP6-175956
    - "Leakage Current Reduction/Minimization through Substrate and/or Well
      Bias Control Coupled with Clock Power Management", IBM Technical
      Disclosure Bulletin, vol. 41 No. 01, Jan. 1998, pp. 547-549.
CT - (US20010028270)
      US4130899; US4683382; US4691123; US4716463; US5077518; US5477279;
      US5511026; US5530398; US5663919; US5747977; US5773966; US5898235;
      US6049245; US6118267; JP6-175956
AB - (US6333671)
      The leakage current on a semiconductor is reduced while the
      semiconductor is in a sleep mode. This is accomplished by (1) placing
      the semiconductor in the sleep mode; (2) providing the semiconductor
      an internal supply voltage derived from an external supply voltage
      applied to the semiconductor chip (where the internal supply voltage
      is less in quantity than the external supply voltage); and (3)
      reducing the internal supply voltage when the semiconductor enters the
      sleep mode from an activated mode and returning the internal supply
      voltage to an activated mode level when the semiconductor returns to
      the activated mode. The reducing step includes supplying the external
      supply voltage to a reference circuit which outputs therefrom a
      reference voltage; and supplying the reference voltage to a regulator,
      where the regulator attempts to match the reference voltage and
      outputs therefrom the internal supply voltage. The reference circuit
      reduces the reference voltage when the semiconductor enters the sleep
      mode from an activated mode and returns the reference voltage to the
      activated mode level when the semiconductor returns to the activated
      mode. The reducing step can be performed by reducing the current flow
      to one or more diodes in the reference circuit when the semiconductor
      enters the sleep mode from the activated mode, and increasing the
      current flow to the diodes when the semiconductor reenters the
      activated mode from the sleep mode.

3/3 PLUSPAT - (C) QUESTEL-ORBIT- image
PN - US6294404 B1 20010925 [US6294404]
      JP2001155487 A 20010608 [JP2001155487]
TI - (B1) Semiconductor integrated circuit having function of reducing a
      power consumption and semiconductor integrated circuit system
      comprising this semiconductor integrated circuit
PA - (B1) MITSUBISHI ELECTRIC CORP (US)
PA0 - Mitsubishi Denki Kabushiki Kaisha, Tokyo [JP]
IN - (B1) SATO HIROTOSHI (JP)
AP - 2000US-0568058 20000510; 1999JP-0339609 19991130

```
PR  - 1999JP-0339609 19991130
CT  - (US6294404)
      US5265060; US5543649; US5898235; US5955904; JP10-214487
AB  - (US6294404)
      A semiconductor integrated circuit according to the present invention
      comprises a synchronous SRAM, a signal generation circuit generating a
      chip selection signal, a clock signal etc. supplied to the synchronous
      SRAM, a voltage set circuit setting the voltage of a system power
      supply line and a controller controlling the signal generation circuit
      and the voltage set circuit. When setting the synchronous SRAM in a
      power down mode, the chip selection signal is set in a nonselective
      state and the power supply voltage of the system power supply line is
      stepped down to a standby potential. Thus, the synchronous SRAM enters
      a standby state having extremely low power consumption.

<< Cited Patents: Previous Patents Cited by Source Family >>


1/4 PLUSPAT - (C) QUESTEL-ORBIT- image
PN  - US5513361 A 19960430 [US5513361]
TI  - (A) Method and apparatus for reducing power consumption of a fan in a
      computer system
PA  - (A) INTEL CORP  (US)
PA0 - Intel Corporation, Santa Clara CA [US]
IN  - (A) YOUNG BRUCE A  (US)
AP  - 1994US-0279544 19940725
PR  - 1994US-0279544 19940725
CT  - (US5513361)
      US4151611; US4279020; US4293927; US4381552; US4615005; US4642441;
      US4698748; US4712196; US4809163; US4842431; US4980836; US5247805
AB  - (US5513361)
      A circuit for controlling power consumption of a fan within a computer
      system having a central processing unit (CPU) is described. The
      circuit includes a filter circuit coupled to receive a periodical
      pulse signal for detecting duty cycle of the periodical pulse signal
      by converting the periodical pulse signal into an analog signal. The
      analog signal has a voltage level proportional to the duty cycle of
      the periodical pulse signal. The periodical pulse signal is generated
      to control the CPU to be operational between predetermined intervals
      when the CPU is in an inactive state. A comparator circuit is coupled
      to the filter circuit for comparing the voltage level of the analog
      signal with a predetermined voltage level. When the voltage level of
      the analog signal is below the predetermined voltage level, the
      comparator circuit generates a switching signal. A switching circuit
      is coupled to (1) a power supply, (2) the fan, and (3) the comparator
      circuit for disconnecting the power supply from the fan when the
      switching signal is generated by the comparator circuit so as to
      substantially reduce the power consumption of the fan in the computer
      system when the CPU is in the inactive state. A computer system having
      the circuit for controlling power consumption of a fan in the system
      and a method for controlling power consumption of a fan in a computer
      system are also described.

2/4 PLUSPAT - (C) QUESTEL-ORBIT- image
PN  - US5483464 A 19960109 [US5483464]
      KR9505216 B1 19950522 [KR9505216]
TI  - (A) Power saving apparatus for use in peripheral equipment of a
      computer
PA  - (A) SAMSUNG ELECTRONICS CO LTD  (KR)
PA0 - SamSung Electronics Company, Ltd., Kyungki-do [KR]
IN  - (A) SONG MOON-JONG  (KR)
AP  - 1993US-0176450 19931230; 1993KR-0005332 19930331
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PR  - 1993KR-0005332 19930331
CT  - (US5483464)
      US4365290; US4591914; US4593349; US4667289; US4674031; US4677566;
      US4747041; US5059961; US5163124; US5175845; US5214785; US5237692;
      US5249298; US5251320; US5293494; US5347167; US5375245; US5384721;
      US5408668
AB  - (US5483464)
      An apparatus for use in the peripheral equipment of a computer reduces
      the needless consumption of power. Once it has been determined that
      the computer has not been used for a predetermined period of time, an
      operation control signal indicative of a specific control mode is
      supplied for controlling the supply of power to the computer's
      peripheral equipment and the computer's operating state. The operation
      of a power supply means for generating operating power to a computer's
      peripheral equipment is controlled in response to a detected control
      mode. Accordingly, energy is conserved by controlling the supply of
      power and the operating state of a computer's peripheral equipment
      according to the peripheral equipment's operational state.

3/4 PLUSPAT - (C) QUESTEL-ORBIT- image
PN  - US5167024 A 19921124 [US5167024]
      AU6016890 A 19910314 [AU9060168]
      AU629019 B2 19920924 [AU-629019]
      CA2024552 A1 19910309 [CA2024552]
      DE4028175 A1 19910321 [DE4028175]
      GB9018259 D0 19901003 [GB9018259]
      GB2235797 A 19910313 [GB2235797]
      GB2235797 B 19930818 [GB2235797]
      HK36394 A 19940429 [HK9400363]
      JP3171317 A 19910724 [JP03171317]
      SE9002838 D0 19900906 [SE9002838]
      SE9002838 A 19910309 [SE9002838]
      SG7294 G 19940610 [SG9400072]
TI  - (A) Power management for a laptop computer with slow and sleep modes
OTI - (A1) ENERGIEMANAGEMENTANORDNUNG FUER EINEN TRAGBAREN COMPUTER
PA  - (A) APPLE COMPUTER  (US)
PA0 - Apple Computer, Inc., Cupertino CA [US]
IN  - (A) SMITH R STEVEN  (US); HANLON MIKE S  (US); BAILEY ROBERT L  (US)
IN0 - (A) SMITH R STEVEN; HANLON MIKE S; BAILEY ROBERT L
AP  - 1992US-0845781 19920305; 1990SE-0002838 19900906; 1990AU-0060168
      19900803; 1990DE-4028175 19900905; 1994SG-0000072 19940117;
      1994HK-0000363 19940421; 1990CA-2024552 19900904; 1990GB-0018259
      19900820; 1990JP-0237294 19900910
PR  - 1989US-0405637 19890908; 1992US-0845781 19920305; 1994SG-0000072
      19940117
CT  - (US5167024)
      US4019068; US4074351; US4151611; US4279020; US4293927; US4317181;
      US4381552; US4409665; US4611289; US4615005; US4698748; US4712196;
      US4747041; US4809163; US4851987; US4907150; US4980836; EP1723394
AB  - (US5167024)
      A power manager within a portable laptop computer provides power and
      clocking control to various units within the computer in order to
      conserve battery power. Transistor switches controlled by the power
      manager control the distribution of power and/or clock signals to the
      various units within the computer. The power manager includes a
      software routine for continually monitoring the various units and when
      these units are either not needed and/or not currently in use, power
      and/or clock signals are removed from a given unit.

4/4 PLUSPAT - (C) QUESTEL-ORBIT- image
PN  - US4683382 A 19870728 [US4683382]
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        DE3481957 D1 19900517 [DE3481957]
        EP0157905 A2 19851016 [EP-157905]
        EP0157905 A3 19870729 [EP-157905]
        EP0157905 B1 19900411 [EP-157905]
        JP60176121 A 19850910 [JP60176121]
        JP5047848 B 19930719 [JP93047848]
        JP1838072 C 19940411 [JP1838072]
TI  - (A) Power-saving voltage supply
OTI - (A2) Halbleiteranordnung.
    - (A2) Dispositif semi-conducteur.
PA  - (A) TOKYO SHIBAURA ELECTRIC CO  (JP)
PA0 - Kabushiki Kaisha Toshiba, Kawasaki [JP]
IN  - (A) SAKURAI TAKAYASU  (JP); IIZUKA TETSUYA  (JP)
AP  - 1984US-0667417 19841101; 1984DE-3481957 19841030; 1984EP-0113078
        19841030; 1984JP-0032068 19840222
PR  - 1984JP-0032068 19840222
CT  - (US4683382)
        US4580063; US4581551
    - Mano et al., "Submission VLSI Memory Circuits," ISSCC Digest of
        Technical Papers, pp. 234-235, Feb. 1983.

        Itoh et al., "An Experimental IBM DRAW with On-Chip Voltage Limiter,"
        ISSCC Digest of Technical Papers, pp. 282-283, Feb. 1983.
CT  - (EP-157905)
        Cited in the search report
    - US4054830(A)(Cat. A);US4390833(A)(Cat. A);GB2034937(A)(Cat.
        A);EP63483(A)(Cat. A)
    - PATENT ABSTRACTS OF JAPAN, vol. 6, no. 34 (P-104)[912], 2nd March
        1982; & JP-A-56 153 415 (SHINDENGEN KOGYO K.K.) 27-11-1981(Cat. X)
    - PATENT ABSTRACTS OF JAPAN, vol. 3, no. 156 , 21st December 1979, page
        43 E 161; & JP-A-54 137 246 (OKI DENKI KOGYO K.K.) 24-10-1979(Cat. A)
    - MOTOROLA TECHNICAL DEVELOPMENTS, vol. 2, January 1982, page 30,
        Motorola, Schaumburg, Illinois, US; LAL SOOD: "Circuit for reducing
        standby power for a memory device"(Cat. A)
AB  - (US4683382)
        In a semiconductor device according to the invention, first and second
        voltage dropping circuits, for generating voltages respectively having
        smaller values than that of an external power supply voltage, are
        provided. The first voltage dropping circuit, which consumes
        relatively less power, is always in the operative mode, and the second
        voltage dropping circuit, which consumes more power than that of the
        first voltage dropping circuit, is operated during an interval other
        than a standby interval. The voltages generated by the first and
        second voltage dropping circuits are supplied to an internal power
        supply line in parallel with each other.
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Other Display Options

1) **Legal Feature:** Display including corresponding Legal Status record(s):

   PRT <SS N> <format> <set, m-n> <Legal Feature>

   Example:
   PRT SS 3 FULL 1-5 LEGAL   display records 1 thru 5 in FULL format from the search set number 3
   PRT STDR 1-10 LEGALALL   display records 1 thru 10 in STDR format from the last search set
   PRT FULL SET LEGALALL   display all the records in FULL format from the last search set

Legal Feature	*Displays Legal Status Records from the following databases*
LEGAL	LGST (Legal Status)
LEGAL MAXE	LGST (Legal Status) - English text only
LEGALEP	EPPATENT (European Patents)
LEGALIFI	CRXX (Claims/Reassignments)
LEGALERT	LITA (LitAlert)
LEGALUS	CRXX (Claims/Reassignments), LITA (LitAlert)
LEGALLCL	LGST (Legal Status), CRXX (Claims/Reassignments), LITA (LitAlert)
LEGALALL	LGST (Legal Status), CRXX (Claims/Reassignments), and LITA (LitAlert)

2) **Full-text Feature:** Display including corresponding Full-text record(s):
Record display commands issued within PLUSPAT file will display bibliographic records with corresponding claims and descriptions from the US, EP or PCT full-text records.

   PRT <SS N> <format> <set, m-n> <display feature>
       format - display format in bibliographic file
       set - complete set of records, m-n - record numbers
   Example:
   PRT FULL FULLTEXT   displays both the record from the PLUSPAT and a full-text record
   PRT STDR FULLCLMS   displays both the record from the PLUSPAT and a text of the claims
   PRT STGS FULLUS CLMS displays both the record from the PLUSPAT and text of the claims from USPAT

Display Feature	*Displays Full-Text Records from the following databases*
FULLTEXT	USPAT, EPAPAT, PCTFULL
FULLCLMS	(claims only) USPAT, EPAPAT, PCTFULL
FULLUS	USPAT
FULLUS CLMS	(claims only) USPAT
FULLEPO	EPAPAT
FULLEPO CLMS	(claims only) EPAPAT
FULLWO	PCTFULL
FULLWO CLMS	(claims only) PCTFULL

Note: The Legal and Full-text display features cannot be used with the ID display commands.

For the complete listing of all available Legal and Full-text features please consult the appropriate Questel•Orbit System Guides.

Document Display

FORMAT FIELDS

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STDR  PN    STG   TI    OTI   IT    PA    PA0   IN    IN0   IC    PN2   STG2  TI2
      OTI2  PA2   IN2   IC2   PN3   STG3  TI3   OTI3  PA3   IN3   IC3   PN4   STG4
      TI4   OTI4  PA4   IN4   IC4   PN5   STG5  TI5   OTI5  PA5   IN5   IC5   PN6
      STG6  TI6   OTI6  PA6   IN6   IC6   PN7   STG7  TI7   OTI7  PA7   IN7   IC7
      PN8   STG8  TI8   OTI8  PA8   IN8   IC8   PN9   STG9  TI9   OTI9  PA9   IN9
      IC9   LA    AP    FD    PR    EC    ICO   IDT   PCL   BC    DS    DT    UP
TEST  TI    OTI   IT    IC    IC2   IC3   IC4   IC5   IC6   IC7   IC8   IC9   EC
      ICO   IDT   PCL   BC
MAX   PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    LA
      PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9   IN    IN0   AP
      FD    PR    IC    EC    ICO   IDT   PCL   BC    DS    DT    CT    STG   STG2
      STG3  STG4  STG5  STG6  STG7  STG8  STG9  AB    UP
FULL  PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    LA
      PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9   IN    IN0   AP
      FD    PR    IC    EC    ICO   IDT   PCL   BC    DS    DT    CT    STG   STG2
      STG3  STG4  STG5  STG6  STG7
      STG8  STG9  AB    UP
FU    PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    LA
      PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9   IN    IN0   AP
      FD    PR    IC    EC    ICO   IDT   PCL   BC    DS    DT    CT    STG   STG2
      STG3  STG4  STG5  STG6  STG7  STG8  STG9  AB    UP
FUF   PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    LA
      PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9   IN    IN0   AP
      FD    PR    IC    EC    ICO   IDT   PCL   BC    DS    DT    CT    STG   STG2
      STG3  STG4  STG5  STG6  STG7  STG8  STG9  AB    UP
ALL   PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    TI2   TI3   TI4
      TI5   TI6   TI7   TI8   TI9   OTI   IT    OTI2  OTI3  OTI4  OTI5  OTI6  OTI7
      OTI8  OTI9  LA    PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9
      IN    IN0   IN2   IN3   IN4   IN5   IN6   IN7   IN8   IN9   AP    FD    PR
      IC    IC2   IC3   IC4   IC5   IC6   IC7   IC8   IC9   EC    IC    IDT   PCL
      BC    DS    DT    CT    STG   STG2  STG3  STG4  STG5  STG6  STG7  STG8  STG9
      AB    UP
STGS  PN    STG   TI    OTI   IT    PA    PA0   IN    IN0   IC    PN2   STG2  TI2
      OTI2  PA2   IN2   IC2   PN3   STG3  TI3   OTI3  PA3   IN3   IC3   PN4   STG4
      TI4   OTI4  PA4   IN4   IC4   PN5   STG5  TI5   OTI5  PA5   IN5   IC5   PN6
      STG6  TI6   OTI6  PA6   IN6   IC6   PN7   STG7  TI7   OTI7  PA7   IN7   IC7
      PN8   STG8  TI8   OTI8  PA8   IN8   IC8   PN9   STG9  TI9   OTI9  PA9   IN9
      IC9   LA    AP    FD    PR    EC    ICO   IDT   PCL   BC    DS    DT    CT
      AB    UP
TR    TI    OTI   IT    IC    IC2   IC3   IC4   IC5   IC6   IC7   IC8   IC9   EC
      ICO   IDT   PCL   BC
SC    TI    OTI   IT
SCAN  TI    OTI   IT
ABST  PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    LA
      PA    PA0   IN    IN0   AP    FD    PR    CT    STG   STG2  STG3  STG4  STG5
      STG6  STG7  STG8  STG9  AB    UP
BRF   PN    PN2   PN3   PN4   PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    LA
      IN    IN0   PA    PA0   AP    FD    PR    IC    EC    DS    STG   STG2  STG3
      STG4  STG5  STG6  STG7  STG8  STG9
BIB   PN    TI    OTI   IT    PA    PA0   IN    IN0   AP    FD    PR    CT    STG
DOC   STG   STG2  STG3  STG4  STG5  STG6  STG7  STG8  STG9  PN    PN2   PN3   PN4
      PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    AB    DS    AP    FD    PR
      IN    IN0   PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9
DOCF  STG   STG2  STG3  STG4  STG5  STG6  STG7  STG8  STG9  PN    PN2   PN3   PN4
      PN5   PN6   PN7   PN8   PN9   TI    OTI   IT    AB    DS    AP    FD    PR
      IN    IN0   PA    PA0   PA2   PA3   PA4   PA5   PA6   PA7   PA8   PA9
MTST  TI    OTI   IC    EC    ICO   PCL
MSC   TI    OTI   IC    EC    ICO   PCL
MABS  PN    TI    OTI   PA    PA0   IN    IN0   AP    PR    IC    EC    ICO   PCL
      DS    AB
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MSTD   PN      TI      OTI     PA      PA0     IN      IN0     AP      PR      IC      EC      ICO     PCL
       DS
MALL   PN      TI      OTI     PA      PA0     IN      IN0     AP      PR      IC      EC      ICO     PCL
       DS      CT      AB
MMAX   PN      TI      OTI     PA      PA0     IN      IN0     AP      PR      IC      EC      ICO     PCL
       DS      CT      AB
MMSS   PN      TI      OTI     PA      PA0     IN      IN0     AP      PR      DS
MSTA   PN      TI      OTI     PA      PA0     IN      IN0     AP      PR      IC      EC      ICO     PCL
       DS      AB
MINI   PN      TI      PA      PA0     IN      IN0     AP      PR
MASE   PN      TI      PA      PA0     IN      IN0     AP      PR      AB
BIBP   PN      STG     PN2     STG2    PN3     STG3    PN4     STG4    PN5     STG5    PN6     STG6    PN7
       STG7    PN8     STG8    PN9     STG9    TI      PA      PA0     IN      IN0     AP      FD      PR
       CT
MSTE   PN      TI      PA      PA0     IN      IN0     AP      PR      IC      EC      ICO     PCL     DS
       AB
MSTG   PN      STG     TI      OTI     PA      PA0     IN      IN0     IC      AP      PR      EC      ICO
       IDT     PCL     BC      DS
MCIT   PN      TI      OTI     PA      PA0     IN      IN0     AP      PR      CT      AB
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● "Standardized Number" (XPN, XAP, XPR), fields are not included in any display format. To display these items enter the field name with the PRT command:
Example: PRT XPR or PRT MAX PLUS XPR

User-defined formats

Create customized format for the records display: FOR <name> <field1> <field2> <field3> …<field10>
(format name up to 4 characters, include up to 10 fields)

General Syntax: FOR DISP PN TI OTI PA IN AP PR CT STG EC
Command Syntax: PRT DISP SET ***or*** PRT DISP SS 2 1-10

List of Fields

All these fields may be used with the PRT, LI, BR and =YES commands.

AB	Abstract of the Invention
AN	Accession Number
AP	Application Data
APD	Application Date
BC	Berlin Classification
CT	Cited Patents
DS	Designated States
DT	Document Type
EC	ECLA Classification (EPO)
FD	Filing Details – **US Publications Only**
FPR	Family Priority Number
IC	IPC (issuing Office)
ICA	Additional IPC (International Patent Classification Codes)
ICM	Main IPC (International Patent Classification Codes)
ICO	ICO Classification
ICS	Secondary IPC (International Patent Classification Codes)
IDT	Dutch Classification
IN	Inventor
INC	Inventor Country
IN0	Inventor Name – Transliteration Free – **Japanese Publications Only**
INN	Inventor Name
IT	Index Terms – Select French Publications
LA	Language
NPR	Number of priorities
OTI	Other Title
PA	Patent Assignee
PAC	Patent Assignee Country
PAN	Patent Assignee Name

List of Fields (cont'd)

PA0	Patent Assignee Name – Transliteration Free – **US, EP(06/2002), FR, JP, PCT (02/2003)**
PCL	US Class Code
PD	Patent Date
PN	Patent Number
PR	Priority Details
PRD	Priority Date
QW	Update Code - Questel Week
QM	Update Code – Questel Monthly
STG*	Publication Stage (*this is not searchable)
TI	Title of the Invention
UAB	Update Code - Addition of Abstracts
UCL	Update Code – Addition of European or US Classification Codes
UE	Update Code - Addition of Publication Stages
UCT	Update Code – Addition of Citations/Search Reports
UP	Update Code
XAP	Standardized Application Number
XCT	Standardized Citation Number
XPN	Standardized Patent Number
XPR	Standardized Priority Number